IDAHO
DEPARTMENT OF FISH & GAME

Jerry M. Conley, Director

Niagara Springs Hatchery

Annual Report

October 1, 1980 to September 30, 1981

By

Charles R. Quidor
Fish Hatchery Superintendent III

December 1981

IDAHO
DEPARTMENT OF FISH & GAME

Jerry M. Conley, Director

Niagara Springs Hatchery Annual Report

October 1, 1980 to September 30, 1981

by

Charles R. Quidor
Fish Hatchery Superintendent III

December 1981

TABLE OF CONTENTS

NIAGARA SPRINGS HATCHERY

F.Y. 1980-1981 REPORT

ABSTRACT

A total of 1,475,254 steelhead weighing 316,330 pounds were released into Pahsimeroi River and Snake River below Hells Canyon Dam.

A total of 659,690 pounds of feed was fed to produce 321,265 pounds of steelhead, for a conversion of 2.05:1.

There were 1,365,282 steelhead fingerlings weighing 42,077 lb on hand at the end of September 1981.

Author:

Charles R. Quidor
Fish Hatchery Superintendent III

OBJECTIVES

The objectives of Niagara Springs Hatchery are to:

1. Raise 200,000 lb of steelhead smolt to be released into Pahsimeroi River.

2. Eventually raise 200,000 lb of steelhead to be released into Snake River below Hells Canyon Dam.

The purpose of this project is to continue the program of relocation of Snake River steelhead to Pahsimeroi River and also maintain the steelhead run in the lower Snake River.

INTRODUCTION

Niagara Springs Hatchery is owned and financed 100% by Idaho Power Company. The hatchery is located 10 mi south of Wendell, Idaho in Snake River Canyon at Niagara Springs.

It receives its water supply from Niagara Springs, and requires 110 cfs of water to operate.

The hatchery includes one building 90 ft X 30 ft that houses an office, two incubator rooms, storage rooms, shop and three restrooms. One building 12 ft X 36 ft used for storage and one building 20 ft X 20 ft that houses a 20 ton freezing unit used to chill the water for hauling steelhead. There are 14 raceways 10 ft X 3 ft 10 in X 300 ft, for rearing steelhead. There are three houses for housing the employees, and three trailer pads, one of which is occupied by a Fish and Game mobile home, to house one of the Fish Culturists.

All water used at the hatchery for rearing steelhead, domestic use and the irrigation of approximately 10 acres of lawn is supplied by gravity flow from Niagara Springs.

FISH PRODUCTION

We had on hand the first of October 1980, 1,480,458 steelhead fingerlings weighing approximately 71,175 lb. There was a loss of 5,204 steelhead from October 1980 through 1 May 1981. This was a loss of 0.35%.

We received from the Pahsimeroi Station 2,003,418 eyed steelhead eggs, and 298,952 eyed steelhead eggs were received from the Oxbow Station. These eggs were received during the months of April and May.

The eggs from Oxbow ranged in size from 204 to 264 eggs per ounce. The eggs from Pahsimeroi ranged in size from 238 to 264 eggs per ounce.

These eggs were placed in hatching boxes where they remained until they hatched and became free swimmers. They then swam out of the boxes into circular tanks. The fry were kept in the tanks until they were feeding well. They were then piped out into the short raceways, and as they grew they were moved into the larger raceways. The raceways were extended until the full 300 ft of raceways were utilized.

There was a total loss, including hatching loss, on the steelhead eggs of approximately 137,699, this represents a loss of 5.9%.

All lots of steelhead were started on OMP feed except two tanks which were started on Clear Springs dry diet. There was no visual difference noticed between those started on OMP and those started on dry feed.

There were 1,365,282 steelhead fingerlings weighing 42,077.lb at the end September 1981. This includes 118,457 steelhead fingerlings weighing 2,611 lb that were received from the Hagerman National Hatchery.

FISH HEALTH

Of the fish on hand 1 October 1980 a total of 99.6% were released in March and April 1981. There was no disease encountered on this lot of steelhead during this time.

The fish from the eggs received in April and May became infected with I.H.N. (Infectious Hematopoietic Necrosis) during the first of July 1981, but it was not confirmed until the first of August 1981. Treatment during June, July and August consisted of flushes with Purina 4X and some salt was used on one short raceway. The treatment with Purina 4X was used to help keep down secondary disease.

A loss of 917,846 steelhead was calculated through 30 September 1981. This was a loss of 40%.

The mortality dropped in the month of September 1981 to only 0.4%.

FISH RELEASES

DATE	SIZE OF STEELHEAD	NUMBER OF STEELHEAD	POUNDS OF STEELHEAD	HAULER
19 Jan	10.4/lb	65,520	6,300	I.F.&G.
20 Jan	9.1/lb	24,570	2,700	I.F.&G.
20 Jan	7.8/lb	49,140	6,300	I.F.&G.
21 Jan	5.6/lb	35,280	6,300	I.F.&G.
22 Jan	5.2/lb	32,760	6,300	I.F.&G.
26 Jan	6.0/lb	37,800	6,300	I.F.&G.
03 Feb	6.0/lb	37,800	6,300	I.F.&G.
03 Feb	5.7/lb	15,960	2,800	I.F.&G.
04 Mar	4.1/lb	28,700	7,000	I.F.&G.
09 Mar	3.9/lb	27,300	7,000	I.F.&G.

DATE	SIZE OF STEELHEAD	NUMBER OF STEELHEAD	POUNDS OF STEELHEAD	HAULER
16 Mar	4.4/lb	31,680	7,200	I.F.&G.
16 Mar	3.8/lb	17,600	5,000	I.P.C.
17 Mar	4.4/lb	22,000	5,000	I.P.C.
17 Mar	5.4/lb	16,200	3,000	I.F.&G.
18 Mar	4.7/lb	23,500	5,000	I.P.C.
28 Apr	4.4/lb	28,600	6,500	I.P.C.
29 Apr	4.5/lb	29,250	6,500	I.P.C.
30 Apr	4.5/lb	29,250	6,500	I.P.C.
01 May	4.5/lb	29,250	6,500	I.P.C.
02 May	4.5/lb	30,600	6,800	I.P.C
Total Steelhead		612,760		
Total Pounds of Steelhead			115,300	
Total loads hauled by I.F.&G.				12
Total loads hauled by I.P.C.				8
Total loads hauled				20

All above steelhead were released into Snake River below Hells Canyon Dam.

DATE	SIZE OF STEELHEAD	NUMBER OF STEELHEAD	POUNDS OF STEELHEAD	HAULER
19 Mar	4.5/lb	22,500	5,000	I.P.C.
20 Mar	3.2/lb	16,000	5,000	I.P.C.
21 Mar	3.2/lb	16,921	5,288	I.P.C.
22 Mar	3.3/lb	16,500	5,000	I.P.C.
23 Mar	3.1/lb	15,500	5,000	I.P.C.
24 Mar	3.1/lb	15,500	5,000	I.P.C.
25 Mar	2.7/lb	13,500	5,000	I.P.C.
30 Mar	4.5/lb	31,500	7,000	I.F.&G.
30 Mar	4.5/lb	13,500	3,000	I.F.&G.

FISH RELEASE CONTINUED

DATE	SIZE OF STEELHEAD	NUMBER OF STEELHEAD	POUNDS OF STEELHEAD	HAULER
30 Mar	4.5/lb	13,500	3,000	
	5.1/lb	20,400	4,000	I.F.&G.
30 Mar	5.1/lb	25,500	5,000	I.P.C.
31 Mar	4.4/lb	22,000	5,000	I.P.C.
31 Mar	4.4/lb	30,800	7,000	I.F.&G.
31 Mar	4.5/lb	31,500	7,000	I.F.&G.
31 Mar	4.5/lb	13,500	3,000	I.F.&G.
01 Apr	4.5/lb	22,500	5,000	I.P.C.
01 Apr	4.5/lb	31,500	7,000	I.F.&G.
01 Apr	4.5/lb	22,500	5,000	
	3.1/lb	6,200	2,000	I.F.&G.
01 Apr	3.1/lb	9,300	3,000	I.F.&G.
02 Apr	3.1/lb	21,700	7,000	I.F.&G.
02 Apr	3.1/lb	15,500	5,000	I.P.C.
03 Apr	3.1/lb	930	300	
	3.2/lb	15,040	4,700	I.P.C.
04 Apr	3.2/lb	16,000	5,000	I.P.C.
05 Apr	3.2/lb	16,000	5,000	I.P.C.
06 Apr	3.2/lb	16,000	5,000	I.P.C.
07 Apr	5.0/lb	25,000	5,000	I.P.C.
08 Apr	5.0/lb	25,000	5,000	I.P.C.
15 Apr	5.3/lb	30,432	5,742	I.P.C.
16 Apr	5.4/lb	35,100	6,500	I.P.C.
17 Apr	5.4/lb	14,013	2,595	
	5.7/lb	22,258	3,905	I.P.C.
18 Apr	5.7/lb	37,050	6,500	I.P.C.
19 Apr	5.7/lb	37,050	6,500	I.P.C.
20 Apr	5.7/lb	37,050	6,500	I.P.C.

FISH RELEASE CONTINUED

DATE	SIZE OF STEELHEAD	NUMBER OF STEELHEAD	POUNDS OF STEELHEAD	HAULER
21 Apr	5.7/lb	8,550	1,500	
	4.4/lb	22,000	5,000	I.P.C.
22 Apr	4.4/lb	28,600	6,500	I.P.C.
27 Apr	4.4/lb	28,600	6,500	I.P.C.
Total Steelhead		862,494		
Total Pounds of Steelhead			201,030	
Total loads hauled by I.F.&G.				10
Totals loads hauled by I.P.C.				26
Total loads hauled				36

All above steelhead were released into Pahsimeroi River at the Steelhead Trap.

Idaho Power Company installed new "Fresh flo" water aerating pumps on the Steelhead Transport, and we were able to increase the pounds of steelhead hauled per load from 5,000 to 6,500 pounds.

No major problems were encounted during the hauling this season.

FISH FEED UTILIZED

A total of 659,690 lb of fish feed was fed to produce 321,265 lb of fish. This is a conversion of 2.05:1. The cost of the fish feed was $139,724.29, including sales tax of $4,069.79. The cost of fish food used to produce a pound of fish is 0.434 cents.

The following is a breakdown on the fish feed used during the year of 1980-1981:

FISH FEED SIZE	COST PER POUND	POUNDS USED	COST
no. 1 fry feed	.3053	350	$106.86
no. 2 fry feed	.3053	900	274.77
no. 3 fry feed	.3053	5,000	1,526.51
no. 4 fry feed	.2533	14,000	3,546.20
no. 5 fine crumbles	.1891	18,360	3,471.38
	.2488	45,960	11,434.85

FISH FEED SIZE	COST PER POUND	POUNDS USED	COST
3/32 pellets	.1881	135,460	$ 25,480.02
4/32 pellets	.1881	111,900	20,265.09
	.2120	93,680	19,860.16
5/32 pellets	.2120	233,680	49,540.16
Total Dry Feed		659,290	$135,506.50
Total Sales Tax			$ 4,069.79
Total Dry Feed and Sales Tax			$139,576.29

O.M.P.

FISH FEED SIZE	COST PER POUND	POUNDS USED	COST
16 Mesh	.3700	400	148.00
		---	---
Total OMP Feed		400	148.00
Total Dry and OMP Feed		659,690	$139,724.29

SPECIAL STUDIES

The tagging crew tagged three lots of steelhead the week of 3 November 1980. The first lot consisted of 40,439 steelhead, the second lot consisted of 41,321 steelhead and the third lot consisted of 41,389 steelhead. The first lot was vaccinated with Vibrio vaccine and were released into Pahsimeroi River at the Steelhead Trap on the 30th of March 1981. The tag number of these steelhead is 10/22/41.

The second lot of steelhead was used as the placebo and was released into Pahsimeroi River at the Steelhead Trap on the 30th of March 1981. The tag number of these steelhead is 10/22/42.

The third lot of steelhead was used as the hatchery control and was released into Pahsimeroi River at the Steelhead Trap on the 1st of April 1981. The tag number of these steelhead is 10/22/43.

The purpose of this study is to find out if the steelhead vaccinated with Vibrio vaccine will return in greater numbers than those not vaccinated.

MISCELLANEOUS ACTIVITIES

Most of the schools throughout the area brought several classes of students here again this year, for a tour of the hatchery and a talk about the hatchery and related subjects. The Idaho Power Company Public Relations person scheduled several school classes from the Twin Falls area to tour the hatchery.

We did not have any college or university classes come in this year, and only a few groups were brought in by the feed companies. The National Hatchery brought only a few in this year.

Funding by the State Parks Department was cut off to Niagara Springs Park and we were asked to help in maintaining it during the summer.

Idaho Power Company crews spent many hours here during the year on general maintenance and repair work. Our continued thanks to Bob Butler and his crew for the quality of their work and the quickness in which they respond when we have need of them. It is a pleasure working with them.

HATCHERY NEEDS

There is a need to have a crowding rack that can be moved by the bridge. This would prevent the killing of a large number of steelhead when being crowded. The raceways are so uneven that a hand push crowd rack cannot be held steady and fish are caught under the rack and crushed. A bridge crowder made with flexible rubber wipers on the sides and bottom would prevent this loss.

A concrete spillway is needed at the main water intake dam, so the water can be better controlled. With the dam as is now, when we shut down to clean the raceways and headrace, the Idaho Power Company crew has to bring the backhoe over and dig a ditch through the dam, then when we need more water they again have to bring the backhoe and dump truck and fill in the dam. A concrete spillway would soon pay for itself as well as being easier to control the flow of water.

A change is needed in the system for running the cleaning effluent into the settling pond. The pipes that carry the water from the raceways to the settling pond are not large enough to carry the water from even one raceway, so consequently, a large amount of the cleaning goes out into Niagara Springs Creek. Some system is needed so that more than one raceway can be cleaned at one time without all the water and cleaning going into the creek.

All of the above items were listed in last years report and still apply today.

ACKNOWLEDGEMENTS

Hatchery staffing during the fish year included Charles R. Quidor, Fish Hatchery Superintendent III; David Billman, Fish Hatchery Superintendent I; David May, Fish Culturist; and David Parrish, Fish Culturist.

We had one CETA worker here for five weeks during the latter part of the summer.